INSULIN (h), [^{125}i]-

Product Number: NEX420

Insulin, Human Recombinant

LOT SPECIFIC INFORMATION

CALCULATED AS OF: 8-Jan-2024

LOT NUMBER: LC21640

SPECIFIC ACTIVIT

81.4	TBq/mmol
2200	Ci/mmol
14	MBq/µg
378.8	µCi/µg

Package Size Information

Package Size as of 16-Feb-2024
370 kBq 10 µCi
1.85 MBq 50 µCi

RADIOCHEMICAL PURITY: ≥ 95%

MOLECULAR WEIGHT: 5931.6

PACKAGING: [^{125}I]-Insulin (h) is lyophilized from 0.05M sodium phosphate buffer, pH 7.4, containing 0.2M sodium chloride, 1M glycine, 0.25% bovine serum albumin, and 500KIU/ML Aprotinin. It is shipped on dry ice.

STABILITY AND STORAGE: The lyophilized [^{125}I]-Insulin (h) should be stored at 4°C or lower. Following reconstitution with distilled water to a concentration of approximately 50 µCi/ml on calibration date, aliquot and store at -20°C or lower. Under these conditions the product is stable and usable for at least six weeks after fresh lot date.

SPECIFIC ACTIVITY: The initial specific activity of [^{125}I]-Insulin (h) is expected to be 2200 Ci/mmol (81 TBq/mmol), 378.8 µCi/µg (14.0 MBq/µg). Preparative HPLC is used to separate unlabeled Insulin from [^{125}I]-Insulin (h). Upon decay [^{125}I]-Insulin (h) undergoes decay catastrophe and the specific activity remains constant with time. However, it is not known what molecular fragments are generated from the decay event or what functional activity these fragments may have in different assays. References on ^{125}I decay and decay catastrophe of ^{125}I labeled compounds are available.[1-5]

RADIOCHEMICAL PURITY: Initially greater than 95% radiochemically pure as determined by HPLC

PREPARATIVE PROCEDURE: [^{125}I]-Insulin (h) is radioiodinated with no carrier added ^{125}I using the LPO iodination procedure and is purified by reversed phase HPLC.

AVAILABILITY: [^{125}I]-Insulin (h) is routinely available from stock and is prepared fresh and packaged for shipment on the second Monday of each month. Please inquire for larger package sizes.

APPLICATIONS: [^{125}I]-Insulin (h) is suitable for the use in radioimmunoassay as well as receptor binding assay.

HAZARD WARNING: This product contains a component which is harmful by contact, ingestion or inhalation. It is irritating to the eyes, skin and respiratory tract.

RADIATION UNSHIELDED: 280mR/hr/mCi at vial surface .

REFERENCES:

1. Doyle, V.M., Buhler, F.R, Burgisser, E., *Eur. J. Pharm. 99 353 (1984).*
2. Schmidt, J., *J. Biol. Chem. 259 1660 (1984).*
3. Loring, R.H., Jones, S.W., Matthews-Bellinger, J., Salpeter, M.M., *J. Biol. Chem. 257 1418 (1982).*
4. Berridge, M.S., Jiang, V.W., Welch, M.J., *Rad. Res. 82 467 (1980).*
5. Charlton, D.E., Rad. Res. 107 163 (1986).

IODINE-125 DECAY CHART HALF LIFE=60 days

Radiations Gamma 35.5 keV (7%) , X-ray K alpha 27 KeV (112%), K beta 31 keV (24%)

DAYS	0	2	4	6	8	10	12	14	16	18
0	1	0.977	0.955	0.933	0.912	0.891	0.871	0.851	0.831	0.812
20	0.794	0.776	0.758	0.741	0.724	0.707	0.691	0.675	0.66	0.645
40	0.63	0.616	0.602	0.588	0.574	0.561	0.548	0.536	0.524	0.512
60	0.5	0.489	0.477	0.467	0.456	0.445	0.435	0.425	0.416	0.406
80	0.397	0.388	0.379	0.37	0.362	0.354	0.345	0.338	0.33	0.322
100	0.315	0.308	0.301	0.294	0.287	0.281	0.274	0.268	0.262	0.256
120	0.25	0.244	0.239	0.233	0.228	0.223	0.218	0.213	0.208	0.203

To obtain the correct radioactive concentration or amount for a date before the calibration date: divide by the decay factor corresponding to the number of days before the calibration date. To obtain the correct radioactive concentration or amount for a date after the calibration date: multiply by the decay factor corresponding to the number of days after the calibration date.

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